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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Application of
Dale A. Christensen et al.

Serial No.: 10/786,664

Filed: February 25, 2004

Title: IRRIGATION DRIVE UNIT

Group No.: 3752

5 BEFORE THE BOARD
OF PATENT APPEALS
AND INTERFERENCES

Appeal No. _____

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APPELLANTS' APPEAL BRIEF

Commissioner for Patents
Alexandria, VA 22313

Dear Sir:

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REAL PARTY IN INTEREST

Appellants have assigned their rights to Valmont Industries, Inc.; therefore, the real party in interest is Valmont Industries, Inc.

RELATED APPEALS AND INTERFERENCES

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There are no appeals or interferences related to this case.

STATUS OF THE CLAIMS

This is an appeal of the Examiner's final rejection of claims 1-5. Claim 1 is an independent claim with claims 2-5 ultimately depending therefrom. Appellants believe that each of the claims is individually allowable and stands by itself.

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STATUS OF AMENDMENTS

The Examiner entered a final rejection of Appellants' claims on April 22, 2005. Appellants filed an Amendment After Final Rejection, but the same was not entered by the Examiner.

SUMMARY OF THE INVENTION

The subject invention relates to an irrigation drive unit which has increased traction and flotation due to the fact that each of the drive units thereof has an extra set of driven wheels thereon. (Page 1, lines 10-14).

Prior to Appellants' invention, center pivot irrigation systems, lateral move irrigation systems and corner irrigation systems utilized a plurality of spaced-apart drive units or towers with each of the drive units comprising an elongated base beam having a drive wheel at the opposite ends thereof. (Page 1, lines 16-24). The prior art systems do not allow the driven wheels of the drive units to pivot over uneven terrain which causes inconsistent weight distribution. Traction loss and rutting can appear if all the driven wheels are unable to contact the ground with approximately equal weight distribution. (Page 2, lines 1-4).

The self-propelled irrigation system 10 of this invention comprises an elongated pipeline supported upon a plurality of spaced-apart drive units or towers 16. (Page 4, lines 2-5). As stated in the Summary of the Invention of the instant application, at least one of the drive units, and preferably all the drive units, includes a transversely extending base beam having first and second ends with first and

1 second drive assemblies pivotally connected to opposite ends of the base beam.
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(Page 2, lines 6-13).

More particularly, the drive unit of this invention includes a modified base beam 28 having ends 30 and 32 with base beam 28 being generally horizontally disposed with its longitudinal axis being disposed transversely to the longitudinal axis of the pipeline 14. End 30 of base beam 28 has a bracket assembly 34 secured thereto while end 32 of base beam 28 has a bracket assembly 36 secured thereto.
5 (Page 4, lines 11-17).

A drive assembly 38 includes a bracket assembly 42 which is pivotally connected to bracket assembly 34 so that the drive assembly 38 is pivotally mounted at one end of the base beam 28. Drive assembly 40 includes a bracket assembly 44 which is pivotally secured to bracket assembly 36 on the other end of base beam 28 so that the drive assembly 40 is pivotally mounted at the other end of the base beam
10 28. (Page 4, lines 19-22 and Fig. 5). Elongated supports 50 and 52 are secured to the lower ends of bracket assemblies 42 and 44, respectively, for pivotal movement with bracket assemblies 42 and 44. (Page 4, lines 24-25). Gearboxes 72 and 74 are mounted at the opposite ends of support member 50 while gearboxes 78 and 80 are mounted at the opposite ends of support 50. An electric motor 70 drives gearboxes
15 72 and 74 while electric motor 76 drives gearboxes 78 and 80. (Page 5, lines 1-10 and Fig. 5). Drive wheels 58 and 60 are secured to gearboxes 72 and 74, respectively, while drive wheels 66 and 68 are operatively connected to gearboxes 78 and 80, respectively, which results in four drive wheels.
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1 As the drive unit 26 moves through the field, the pivotal connection of the pairs
of wheels to the opposite ends of the base beam 28 enables the wheels to pivot to
various positions relative to the base beam 28, such as seen in Figs. 2, 3 and 4, so
that each of the drive wheels maintains driving contact with the irregular terrain over
5 which the unit may be passing. The pivotal arrangement of the pairs of wheels with
respect to the base beam ensures that proper torque will be provided to all of the
drive wheels. In the event of rough ground or change of elevation, the drive
assembly is permitted to pivot (Fig. 4) to allow the load to be shared between the
10 wheels equally, as illustrated in the drawings. The approximate equal sharing of the
load between the wheels enhances traction and reduces rutting. The in-line
positioning of the drive wheels creates a single track in the field to minimize crop
loss. (Page 5, lines 11-22).

15 ISSUES

- (A) Whether claims 1-5 comply with 35 U.S.C. § 112, second paragraph.
(B) Whether claims 1, 2, 4 and 5 are unpatentable over Chapman
(6,131,833) pursuant to 35 U.S.C. § 102(b).

20 GROUPING OF CLAIMS

Claim 1 is an independent claim with claims 2-5 ultimately depending
therefrom. Appellants believe that each of the claims defines subject matter which is
patentable and stands by itself.

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ARGUMENT

(A) Whether claims 1-5 satisfy 35 U.S.C. § 112, second paragraph.

In the final rejection, the Examiner stated that claims 1-5 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point 5 out and distinctly claim the subject matter which Appellants regard as the invention.

The Examiner stated that claim 1 recites "a plurality of spaced-apart drive units" in lines 2-3 and that the claim further defines "at least one of said drive units including a generally transversely extending base beam having first and second ends" in lines 4-

5. The Examiner stated that if there is only one drive unit that includes a generally transversely extending base beam having first and second ends, there is no longer a plurality of drive units. Thus, the Examiner concluded that the claim is contradictory.

It is quite clear that the Examiner does not understand the significance of 15 claim 1. Claim 1 describes a self-propelled irrigation system including an elongated pipeline supported upon a plurality of spaced-apart drive units. Claim 1 further states that at least one of the drive units includes a generally transversely extending base beam having first and second ends. As stated in the Summary of the Invention of the application, at least one of the drive units, and preferably all of the drive units, 20 includes a generally transversely extending base beam having first and second ends.

Claim 1 goes on to state that a first in-line drive assembly is pivotally connected to the said base beam adjacent the first end thereof and that a second in-line drive assembly is pivotally connected to the base beam adjacent the second end thereof.

The reason that claim 1 stated that at least one of the drive units has the first and 25

1 second in-line drive assemblies secured thereto is that claim 1 would have been
easily avoided by a competitor if the claim required that all of the drive units on the
system had the first and second in-line drive assemblies pivotally secured thereto.
Thus, the claim is not contradictory and specifically describes that at least one of the
5 spaced-apart drive units has the first and second in-line drive assemblies pivotally
secured to the opposite ends thereof.

The Examiner also stated that according to the specification, page 2, lines 7-
24 and page 4, lines 5-11, the first in-line drive assembly and the second in-line drive
10 assembly appear to be subassemblies of the spaced-apart drive units. The Examiner
concluded that the recitation of the "first in-line drive assembly" and the "second in-
line drive assembly" in claim 1, lines 6 and 8, respectively, appear to be double
inclusions of the drive units recited in claim 3. Apparently the Examiner has failed to
distinguish between the plurality of spaced-apart drive units 24 and the drive
15 assemblies 34 and 36 pivotally mounted on opposite ends of the base beam in
question. The first in-line drive assembly and the second in-line drive assembly are
not a double inclusion of the drive units recited in claim 3.

Accordingly, the Examiner's 35 U.S.C. § 112 rejection should be reversed.

20 (B) Whether claims 1, 2, 4 and 5 are anticipated by Chapman (6,131,833)
under 35 U.S.C. § 102(b).

In the final rejection, the Examiner stated that Chapman discloses a self-
propelled irrigation system including a pipeline 14 supported upon a plurality of
spaced-apart drive units 22 and that the drive units 22 include a generally
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1 transversely extending base beam 24. Appellants agree that Chapman does
disclose a self-propelled irrigation system including a pipeline 14 supported upon a
plurality of spaced-apart drive units 22 and that the drive units 22 each includes a
tubular frame which is referred to by the reference numeral 24. The Examiner further
5 stated that Chapman discloses first and second in-line drive assemblies including:
an elongated support member 60; a first driven wheel 48; and a second driven wheel
48. It is clear that the Examiner does not recognize the distinction between a driven
wheel and an idler wheel. Col. 3 of the Chapman reference, at lines 8-15, specifically
describes that the wheel assemblies 48 are idler wheel assemblies. Thus, wheels 48
10 are not driven wheels but are simply idler wheels.

It is quite clear that Chapman '833 cannot anticipate claim 1. Chapman does
not disclose a first in-line drive assembly of the base beam since the wheels 48 of
Chapman cannot be construed as a drive assembly since the wheels 48 are idler
15 wheels. Further, Chapman cannot be regarded as teaching a second in-line drive
assembly pivotally connected to the base beam adjacent the second end thereof
since the wheels 48 at the other end of the beam are also idler wheels are not driven
wheels and therefore do not form a part of a drive assembly.

20 Further, claim 1 specifically describes that each of the first and second drive
assemblies includes an elongated support member with first and second driven
wheels being rotatably mounted on the elongated support adjacent the first and
second thereof, respectively. Accordingly, claim 1 is not anticipated under 35 U.S.C.
§ 102 on the basis of Chapman.

1 Claim 2 depends from claim 1 and further describes that the driven wheels are positioned in-line laterally of the base beam and laterally of the elongated support member. As seen in Fig. 8 of Chapman, the wheels 48 are not positioned laterally of the base beam. Accordingly, Chapman cannot anticipate claim 2.

5 Claim 4 depends from claim 1 and describes that the pivotal connection between the elongated support member and the base beam is located beneath the base beam. Although Chapman could be construed as describing or teaching that the pivotal connection between the support member and the base beam is located beneath the base beam, claim 4 necessarily includes the limitations of claim 1 which are clearly not taught by Chapman. Accordingly, claim 4 cannot be anticipated by Chapman.

10 Claim 5 depends from claim 1 and further describes that the self-propelled irrigation system comprises a center pivot irrigation system. While Chapman does teach a self-propelled irrigation system, claim 5 includes the limitations of claim 1 which are clearly not found in Chapman. Accordingly, claim 5 is not anticipated by Chapman. Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference or embodied in a single prior art reference. In re Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994). For anticipation, there must be no difference between the claimed invention and the reference disclosure as viewed by a person of ordinary skill in the field of the invention. Scripps Clinic & Res. Found. v. Genentech, Inc., 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991). The elements must either be inherent or disclosed

1 expressly and must be arranged as in the claim. Richardson v. Suzuki Motor Co.,
868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989).

It is clear that Chapman does not anticipate claims 1, 2, 4 or 5 under 35
U.S.C. § 102. The wheels 48 of Chapman are not driven wheels but are merely idler
5 wheels. There is a vast difference between an idler wheel and a driven wheel.
Accordingly, claims 1, 2, 4 and 5 are not anticipated by Chapman under 35 U.S.C. §
102.

CONCLUSION

10 The foregoing has clearly shown that each of claims 1, 2, 4 and 5 is not
anticipated by Chapman. Further, the foregoing has clearly shown that claims 1-5
satisfy the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, the
Examiner's final rejection should be reversed in all respects.

15 Respectfully submitted,



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CERTIFICATE OF MAILING

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I hereby certify that the original of APPELLANTS' APPEAL BRIEF for DALE A. CHRISTENSEN, ET AL., Serial No. 10/786,664, was mailed by first class mail, postage prepaid, to the Mail Stop Appeal Briefs-Patent, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 9 day of June, 2005.

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Dennis J. Thomte

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APPENDIX

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1. In combination:

a self-propelled irrigation system including an elongated pipeline supported upon a plurality of spaced-apart drive units;

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at least one of said drive units including a generally transversely extending base beam having first and second ends;

a first in-line drive assembly pivotally connected to said base beam adjacent said first end thereof;

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a second in-line drive assembly pivotally connected to said base beam adjacent said second end thereof;

each of said first and second drive assemblies including:

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(a) an elongated support member, having first and second ends, pivotally connected, about a generally horizontal axis which is generally transverse to the longitudinal axis of said base beam, to said base beam adjacent the associated end thereof;

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(b) a first driven wheel rotatably mounted on said first elongated support member adjacent said first end thereof;

(c) and a second driven wheel rotatably mounted on said first elongated support member adjacent said second end thereof.

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2. The combination of claim 1 wherein said driven wheels are positioned in-line laterally of said base beam and laterally of said elongated support member.

1 3. The combination of claim 1 wherein each of said first and second drive
assemblies includes a drive motor and two gearboxes operatively connected to said
driven wheels.

5 4. The combination of claim 1 wherein the pivotal connection between
said elongated support member and said base beam is located beneath said base
beam.

10 5. The combination of claim 1 wherein said self-propelled irrigation system
comprises a center pivot irrigation system.

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